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ABSTRACT

A review of the literature indicates that the Nelson-Denny Reading Test (NDRT) may be a viable instrument for screening students and predicting their academic success in particular circumstances. In 1981, a study was conducted at Schoolcraft College to determine the extent of the relationship between the reading abilities of entering students and their grades in specific classes. Approximately 1,200 newly-admitted freshmen students were admitted in the summer of 1981 and were administered the NDRT as part of an established orientation program. Those students who took the reading test, actually registered, and received final grades in selected introductory courses were selected for the study. A correlation scattergram showing reading scores and class grades in Basic Biology, General Biology, Introduction to Business, Basic English, English Composition and Survey of American Government indicated a small positive linear relationship between reading score and class grade. The correlation of reading abilities with the business, English, and political science course grades was statistically significant at the .01 level using the Pearson product correlation, while neither biology course showed strong relationships between reading level and course grade. While the study suggests the possibility of using the NDRT score as a predictive instrument, it should not be the sole criterion for determining likely student success. (AYC)

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THE NELSON-DENNY READING TEST AS A PREDICTOR OF ACADEMIC SUCCESS IN SELECTED CLASSES IN A SPECIFIC COMMUNITY COLLEGE

A RESEARCH STUDY (Pilot Project)

by

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With increasingly wider ranges of student abilities in community colleges, methods must be developed to select students who may not become successful. Intervention techniques may then be implemented before a failure syndrome becomes entrenched. In order to provide supplementary services to students who may need them, it is first necessary to identify those students likely to have academic problems.

REVIEW OF LITERATURE

A review of the literature indicates that the NDRT (Nelson-Denny Reading Test, 1976) may be a viable instrument for screening and predictive use in particular circumstances. It may serve as a feasible alternative to the SAT when a quick verbal measure is needed (Dary, 1981). It may be useful in predicting performance in an introductory psychology class (Gerow and Murphy, 1980). When 7,100 students were tested in the Virginia Community College system, the NDRT Vocabulary and Comprehension scores correlated positively with final course grades in psychology and English (Levin, Bernard H. and others, 1978). With regard to English courses specifically, a small but significant positive correlation was obtained between the NDRT and English grades with 525 students (Spiller and Hall, 1978). For 1,981 entering students at Leeward Community

College the correlation coefficient between NDRT Vocabulary score and GPA was .224, but the Comprehension score and GPA correlation dropped to .111 (Leeward Community College Report No. 13, 1975). These results are not conclusive of the NDRT's predictive validity in specific situations.

PURPOSE OF STUDY

The purpose of this study is to determine the extent of the relationship between the reading abilities of Schoolcraft College students and their academic achievement. Schoolcraft is a community college with an open-door admission policy located in the metropolitan Detroit area. During the past decade, entry-level reading skills have declined as well as student retention rates. It is necessary to find a method of selecting students who may not become successful as determined by grade point averages so that support services may be appropriately provided. The importance of this study lies in its ability to help define such a method.

RESEARCH QUESTIONS

1. Are there statistically significant correlations between entering Schoolcraft college students' NDRT Total Scores and grades in specific classes?

2. Are there educationally significant observations which may be interpreted from these data?
3. Is it possible to utilize the NDRT Total Score as a predictive instrument at Schoolcraft?

PROCEDURE

During the summer of 1981, approximately 1200 newly-admitted freshmen students at Schoolcraft College were tested in reading as part of an established orientation procedure. Only those students who took the reading test, actually registered, and received final grades for the selected classes during the Fall 1981 semester were included in this study. The following six classes were arbitrarily chosen because of their introductory nature and heavy enrollment:

Biology 51 (Basic Biology)

Biology 101 (General Biology)

Business 101 (Introduction to Business)

English 51 (Basic English)

English 101 (English Composition)

Political Science 105 (Survey of American Government)

The NDRT Total Score grade equivalents ranged from <6 through >15 while class grades for the six specified classes were A, B, C, D, or E. Final grades of I (Incomplete) and W

(Withdrawal) were not included in the study.

RESULTS

A correlation scattergram showing reading scores and class grades was developed for each of the six classes. These scattergrams indicated a small positive linear relationship between reading score and class grade. The strength of this relationship was clarified further by the Pearson product moment correlation (Table 1).

Table 1. Chart for class, correlation, and significance

Class	N	M Reading	S Score	r	r^2	P
Biology 51	40	11.23	2.39	.31	.09	.052
Biology 101	80	11.78	2.19	.11	.01	.321
Bus. 101	171	11.04	2.25	.26	.07	.0008*
English 51	94	9.91	2.62	.27	.07	.0091*
English 101	383	11.80	2.12	.26	.07	.000013*
Pol. Sci. 105	251	11.84	2.23	.32	.10	.000015*

*Statistically significant at .01 level

The correlation of reading with Business 101, English 51, English 101, and Political Science 105 was statistically significant at the .01 level. Neither biology class

appeared to have a strong relationship to reading. This may be due to the nature of the classroom instruction which leans heavily toward lectures and lab work. In fact, in several sections of Biology 51 at Schoolcraft, no textbook is utilized. It is interesting to note that the means of the reading scores in specific classes were quite similar except for English 51 where the mean was 9.91 grade level. English 51 is viewed by many students as developmental/remedial in nature. Emphasis is placed on composition and grammar. Any correlation may be partly due to self-screening of students into selected classes.

DISCUSSION

From an educational perspective, a correlation between two variables is very difficult to interpret. Statistically significant data may not always be educationally significant. For example, the correlation of .26 in Business 101 actually indicates that only 7% of the variance of final grades in Business 101 could be explained by the linear relationship of reading and Business 101; 93% cannot be explained. Close scrutiny of the coefficient of determination (r-square) is of paramount importance. Although four of the classes have a statistically significant correlation, the scattergrams provide a more detailed description. It is necessary to proceed with

caution before employing a single screening instrument of success. Other factors need also to be considered.

IMPLICATIONS

The essential implications yielded by this study are three-fold. Initially this study appears to support indications that the NDRT may be a viable screening instrument to help select students who may not be successful in class. Statistically significant correlations were obtained from classes which have a reading component. The statistically significant low correlation with English classes may have been partly affected by student placement as indicated by reading score means.

However, the educational significance of these data must be interpreted with caution. Only a small percentage of the variance in the class grades can be explained by reading scores as illustrated by the coefficient of determination in Table 1. Over 90% of the variance in class grades cannot be explained by the reading scores. Other factors appear to be operating simultaneously. Further investigations should consider variables such as age, motivation, social status, student status, curriculum, etc.

Therefore, this study suggests the possibility of using the NDRT Total Score as a predictive instrument only with limitations. It should not be the sole criterion for

determining which students may not be successful at Schoolcraft College.

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